

PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year)	6 OCT 2004
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Applicant's or agent's file reference
BJN:SM:FP20209

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/AU2004/001110

International filing date (day/month/year)
20 August 2004

Priority date (day/month/year)
21 August 2003

International Patent Classification (IPC) or both national classification and IPC
Int. Cl. ⁷ C07H 15/14; A61K 31/70; A61P 31/04

Applicant
GRIFFITH UNIVERSITY et al

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input checked="" type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
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Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. III **Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos: **1-27, 29-33 (in part)**

because:

☐ the said international application, or the said claim Nos.

relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos.
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos.
are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. **1-27, 29-33 (in part)**

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form ☐ has not been furnished

☐ does not comply with the standard

the computer readable form ☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

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Box No. V **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims 1-27 (in part), 28, 29-33 (in part)	YES
	Claims	NO
Inventive step (IS)	Claims 1-27 (in part), 28, 29-33 (in part)	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-33	YES
	Claims	NO

2. Citations and explanations:

The following documents were cited in the International Search Report:

D1 – Owen et al, Carbohydrate Research, Vol. 328, 2000, pages 287-292

D2 – Yang et al, STN File CA Online Abstract No. 121:34414

D3 – Cremlyn et al, STN File CA Online Abstract No. 111:134492

Note that the International Search was largely based on galactofuranosyl and glucofuranosyl compounds supported by the description and that this search forms the basis of the novelty and inventive step considerations of this opinion.

NOVELTY (N) and INVENTIVE STEP (IS)

The above documents D1, D2 and D3 do not disclose or suggest compounds of the Formula I as presently defined. Accordingly claims 1-33 are novel and inventive over the disclosures of these documents.

Note also the indications under Box VI, Certain documents cited.

INDUSTRIAL APPLICABILITY (IA)

Claims 1-33 are considered to possess industrial applicability.

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Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

<u>Application No. Patent No.</u>	<u>Publication date (day/month/year)</u>	<u>Filing date (day/month/year)</u>	<u>Priority date (valid claim) (day/month/year)</u>
P,X WO 2003/070715 A	28 August 2003	21 February 2003	22 February 2002

This document discloses antimicrobial furanosyl sulfenamide compounds that are closely related to the sulfenamide compounds that are presently claimed. As sulfenamide oxides appear to be used interchangeably with sulfenamides in the art, this document is considered relevant to claims 1-33.

2. Non-written disclosures (Rules 43bis.1 and 70.9)

<u>Kind of non-written disclosure</u>	<u>Date of non-written disclosure (day/month/year)</u>	<u>Date of written disclosure referring to non-written disclosure (day/month/year)</u>
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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1-27 and 29-33 lack descriptive support. The specification only provides examples of compounds of the Formula I wherein A is O, and provides no examples of such compounds wherein A is S, SO, SO₂, Se, Te, NR₈, CR₉R', NO and C(O). In addition, claim 1 includes compounds incorporating carbocyclic and heterocyclic rings attached to the ring and amine moieties of Formula I that would be substantially different from the compounds that have been exemplified. Consequently the above claims include groups of compounds that have not been synthesised or tested for antibacterial activity and whose structure differs substantially from the compounds that have been synthesised and tested. Accordingly claims to such compounds are considered to constitute an unreasonable extrapolation from the compounds that have been exemplified and therefore lack descriptive support.